

Study on the Development of Qionglai Modern Agricultural Seed Industry Park

Ge He

Management School
Sichuan Agricultural University
Chengdu, China, 611130

Abstract—This paper aims at studying the functional positioning and overall layout of the agricultural seed industry park in Qionglai city. To achieve it, the field survey is adopted and the results show that the function of agricultural seed Industry Park in Qionglai city should be located in scientific research, agricultural machinery, warehouses and logistics, exhibition and sales and financial information. And its overall layout includes high-end seed industry research and development base, high-end seed industry test and demonstration base, seed industry production base and grain and oil production base. The paper also puts forward some policy suggestions on developing the agricultural seed industry park.

Keywords—Modern Agricultural Seed Industry Park; Agricultural Development; Qionglai City

I. INTRODUCTION

Qionglai City is located in the southwest of Chengdu. It is located between 30°12'–30°33', 103°04'–103°45', with a length of 68.5 kilometers from east to west and a width of 38.5 kilometers from north to south. It is adjacent to Dayi in the north, Xinjin County and Pengshan County in the east, Yucheng District and Lushan County in Ya'an City in the west, and Pujiang County and Mingshan district in Ya'an City in the south. The last years saw the development of modern agricultural industry in Qionglai City has made remarkable progress with the agricultural industry system constantly improved, farmers' income increasing and rural social development flourishing. China is a big agricultural country, and the choice of agricultural modernization path has always been the focus of scholars' research. Scholars have done a lot of research on how to realize the development of modern agriculture and made a lot of achievements. For example, some scholars believe that China has a vast territory and should adopt different modes of agricultural modernization according to local conditions [1]. Some scholars believe that the key and core of China's agricultural modernization lies in the citizenization of farmers. Only when a large number of rural residents become urban residents can agricultural modernization be possible [2]. Some scholars believe that the fundamental path of China's agricultural modernization lies in the integration of rural and urban development. Only by fully developing the different functions of rural and urban areas can we effectively promote the development of agricultural modernization [3]. The rest scholars think that the difficulty of agricultural modernization in China lies in the rural land

system. Only by establishing a land system suitable for agricultural modernization can agricultural modernization be realized [4]. Qionglai is an important rice seed production base in Sichuan Province. It is the key to constructing the modern agricultural industry system of Qionglai by planning and constructing modern agricultural seed industry parks to drive and lead the development of modern agriculture. Firstly, the development of the modern agricultural seed industry has become a national strategy. The agricultural seed industry is a national strategic and basic industry, and it is fundamental to promote the long-term stable development of agriculture and ensure national food security. The state has attached great importance to the development of the modern seed industry and has issued several important documents, such as Opinions on Accelerating the Development of Modern Crop Seed Industry and National Planning for the Development of Modern Crop Seed Industry (2012-2020). The 13th Five-Year Plan also took modern seed industry as one of the eight major projects of agricultural modernization. The report of the Nineteenth National Congress pointed out that "to ensure national food security, the Chinese people's jobs firmly in their hands". The development of modern seed industry is the basis of grain production, and it has become a national strategy. Secondly, the competition among modern seed industries is becoming increasingly fierce. At present, foreign large seed industry groups have obvious competitive advantages over domestic seed enterprises by virtue of their strong financial strength, strong innovation ability and flexible marketing mode. The agricultural seed industry in Qionglai City has also aimed at increasing grain output while its research, intensive processing and brand building are relatively weak. Thirdly, the hybrid rice seed production base urgently needs transformation and upgrading. In July 2013, the Ministry of Agriculture identified Qionglai City as a "national hybrid rice seed production base". It undertook the important task of building a modern seed production base and ensuring the safety of the seed industry. With the increasing demand for safe, nutritious and high-quality food, the transformation and upgrading of Qionglai Hybrid Rice Seed Production Base to a standardized, large-scale, mechanized and intensive one is an inevitable choice to adapt to market changes.

This paper is co-sponsored by Chengdu Municipal Soft Science 2016 and 2018 Project (No.2015-RK00-00176-ZF; 2017- RK00-00182-ZF), Sichuan provincial Soft Science 2018 Project (No.18RKX0774).

II. THE NECESSITY ANALYSIS OF PLANNING AND CONSTRUCTION OF MODERN AGRICULTURAL SEED INDUSTRY PARK IN QIONGLAI CITY

A. *Breakthrough to improve the overall level of modern agriculture*

The seed industry park will take the development of modern seed industry technology, production and processing and related industries as its core task, and promote the development of seed industry production bases in Gaogeng, Ranyi, Guyi and Qianjin townships. The completed Qionglai Agricultural Seed Industry Park has the characteristics of high-end, high efficiency and high radiation. It has obvious comparative advantages in promoting the restructuring of the agricultural industry and the formation of industrial clusters. It is of great significance to the construction of modern agriculture led by the high-end seed industry.

B. *Promoting agricultural efficiency farmers continuous income rise*

Compared with common agricultural products, agricultural seed products have a higher market value. Therefore, to give full play to the advantages of Qionglai agricultural seed industry resources, seed production base construction as a starting point. It is of great significance to promote the development of the agricultural seed industry in Qionglai City, to increase farmers' income and to promote agricultural efficiency by promoting the integration of planting, breeding and agricultural tourism industries through the development of seed industry.

C. *Making the Ethnic Seed Industry Bigger and Stronger*

Central Conference on Rural Work in 2016 proposed that scientific and technological innovation in seed industry should be accelerated to make the national seed industry strengthen and enlarge. Qionglai seed industry is the pioneer and leader of seed industry development in Southwest China. It is important for promoting the leap-forward development of seed industry in Southwest China, strengthening seed industry leadership in Southwest China and strengthening national seed industry by integrating and utilizing Qionglai's resource endowment, improving the effect of the industrial cluster and scale efficiency, and constantly improving the industrial chains.

D. *Promoting scale development of high-end seed industry*

At present, Qionglai has gathered seven seed industry enterprises, such as Jinzhuo in Chengdu, Jiahe in Sichuan, Sichuan Agricultural Science and Technology, Fengda in Anhui, Zhongyan and Huafeng, which have a solid foundation for the rapid development of high-end seed industry. The high-end seed industry base covers an area of 30,000 mu, accounting for 53% of the total seed industry base in Chengdu. The output of hybrid rice seeds reaches 5 million kg and the output value reaches 210 million yuan. Qionglai has initially realized the centralized and continuous operation of the high-end seed industry, which has led the surrounding farmers to develop the seed production base area of more than 3,000 Mu and realized the average annual income of the base seed production farmers of 3,200 yuan. The scale development of the seed industry will

change from the expansion of quantity to the simultaneous improvement of scale, quality and benefit, which will better exert the multiplier effect of the Qionglai seed industry brand.

III. FUNCTIONAL ORIENTATION AND OVERALL LAYOUT OF MODERN AGRICULTURAL SEED INDUSTRY PARK IN QIONGLAI CITY

A. *Functional orientation*

Firstly, scientific research service functions. On one hand, through the construction of research stations of universities and scientific research institutes, the park will be equipped with facilities such as rice, rape, vegetables, livestock and poultry breeding laboratories; on the other hand, the park will build seed identification and testing centers, equipped with professional equipment and identification and testing personnel to provide scientific research, technological development and production services for park enterprises. Secondly, agricultural machinery service functions. The park will regularly teach agricultural machinery operation technology, safe use, maintenance and troubleshooting methods, publicize relevant laws and regulations and agricultural machinery purchase subsidies, support technical consultation, technology promotion and other functions, optimize the allocation of agricultural machinery and equipment resources to optimize the efficiency and efficiency of agricultural machinery use. Thirdly, the park will build drying warehouses, logistics distribution centers, e-commerce service platforms, and provide all-round, one-stop warehousing logistics services through supporting seed drying, warehousing management, cargo handling, e-commerce, transportation and distribution, logistics information release and other functions. Fourthly, exhibition and sales function. Construction of agricultural seed industry scientific and technological innovation achievements and seed development exhibition and marketing area, popular science education area, seed industry culture exposition and creative tourism area. Planning and construction of the enterprise image exhibition hall in the park, holding regular seed fairs and seed industry "public open day" cultural tourism activities. Through supporting exhibition and marketing functions, the integration of popular science and R&D, production and service, local and school can be realized. Finally, financial information functions. By providing networked, intelligent and off-line trading platforms, it can promote Park management, seed rights and seed industry achievements transformation. Construction of information release halls and information centers for seed rights, grain and oil prices and trade services for large agricultural products; construction of small trade fairs and windows for trade, commercial banks, securities investment institutions, labor services, personnel services, approval services, supporting financial services, information services, approval management, investment promotion and creation New entrepreneurship and other functions, focusing on the construction of seed industry public service cloud data platform, to achieve the modernization of the whole industry chain, information management and services.

B. Overall layout

Around the modern agriculture demonstration belt of Xinjin-Qionglai Road and the industrial circle of 10,000 Mu grain and oil area, in the east of Chengdu-Wenjiang-Qionglai Expressway, the north of Nanhe River and the west of Qionglai Industrial Park of Tianfu New Area, the industrial chain of seed industry in the park is constructed according to the development model of "seed research-experimental demonstration-product promotion-scale production". To become the overall structure of "high-end seed industry research and development base - high-end seed industry test and demonstration base - seed industry production base - grain and oil production base".

The first level is the research and development base of high-end seed industry. The high-end seed industry R&D base is located in Gaogeng Town, with a planned land area of 1000 mu, 1 km north of Gaogeng Town. It is composed of a comprehensive service platform and seed industry enterprises, which integrates Park management, R&D, warehousing and logistics, agricultural machinery services, production and processing, exhibition and marketing, business exhibition, trading services, popular science tourism, financial information, talent training, public services, large data cloud platform and other functions. High-end seed industry R&D base is the core and key point of the construction of modern agricultural seed industry parks in Qionglai City.

The second level is the high-end seed industry experimental demonstration base. The high-end seed industry experimental demonstration base is planned to construct a demonstration seed industry base of 5000 mu, which mainly undertakes the functions of purification, purification, identification and breeding of new agricultural varieties. High-end seed industry experimental demonstration base is not only the core base of the agricultural seed industry scientific experiment but also an important link between Seed Industry Park and high-end seed industry production area. The high-end seed industry experimental demonstration base adopts the regular traditional agricultural layout form, scientifically divides the experimental land and matches the storage room, sample bank and agricultural machinery depot, as well as the necessary social production facilities such as water, electricity, gas, etc. for scientific experimental research such as crop breeding, crop cultivation, plant protection, soil fertilizer, etc. and agriculture planting production and demonstration.

The third level is seed production base. This seed production base is planned to build a production and extension base of 100,000 mu. Its main functions are the promotion and demonstration of new varieties, new technologies and new standards. This seed production base is not only the main transformation base of scientific and technological achievements in seed industry but also the main area to promote farmers to participate in the development of seed industry and increase their income. This seed production base has important production demonstration function. It uses mature varieties and technologies in high-end seed industry demonstration area to carry out large-scale demonstration, promotion and application.

The fourth level is the production base of grain and rapeseed oil and the supporting service base of high-end seed industry. The base plans to build 300,000 Mu high-end agricultural varieties application production base, and promote the green and efficient development of large-scale grain, rape, vegetables and pigs in the surrounding districts and counties, including Qionglai City. On this basis, the base will make full use of collective construction land and woodland resources, provide scientific research, processing, warehousing, industrial integration and development services for the core and demonstration areas of the agricultural seed industry park, and focus on building a new forest community in Western Sichuan.

IV. POLICY SUGGESTIONS ON DEVELOPMENT OF AGRICULTURAL SEED INDUSTRY PARK IN QIONGLAI CITY

A. Innovating development mechanism of an agricultural seed industry park

First, we should innovate the land use mechanism. On the one hand, on the premise of not changing the nature of collective land ownership and the use of land for agriculture, farmers are allowed to transfer the right to use agricultural land through various ways, such as equity, subcontracting and leasing, so as to create external conditions for large-scale operation of seed industry parks. On the other hand, rural collective construction land and state-owned land should be allowed to enjoy the same rights within the overall land use planning. That is to say, in order to reduce the construction cost of the park, the construction land needed for the construction project cannot be acquired through land expropriation, and the rural collective construction land in the park should be licensed. Third, to protect the seed industry land in the park. All kinds of industrial land in the park shall be planned as permanent basic farmland, and no project or construction shall be expropriated. The second is to innovate the investment and financing mechanism of Park construction. The demand for capital for park construction is large and the investment cycle is long. The construction and development of agricultural seed industry parks can not be satisfied only by the investment of government financial funds. Therefore, it is necessary to re-establish the investment and financing mechanism of the park. On the one hand, long-term bonds for park construction can be issued, and the coupon interest rate should be higher than the deposit interest rate of bank in the same period, and can be adjusted according to the change of market interest rate. On the other hand, strong industrial enterprises, especially large enterprises, should be attracted to the park for investment and construction through preferential policies such as land and tax. Finally, the construction of the agricultural seed industry park is a basic agricultural project, which is related to national seed industry security and food security. Local governments and park construction institutions should actively strive for financial support from provincial governments and central governments. Third, we should innovate the incentive mechanism for scientific and technological achievements in the park. Science and technology are the driving force for the development of the seed industry. Therefore, the park should innovate the incentive mechanism of scientific and technological achievements, and allow scientific and technological

personnel to share the benefits of technological innovation through various forms such as technology equity. Through sharing the benefits of scientific and technological achievements, we can mobilize the vast number of agricultural scientists and technicians to carry out original innovation and scientific and technological research and development from the source.

B. Innovating park management system

The Park involves comprehensive functions such as scientific research, business, certification, etc. It not only undertakes the functions of government administration, but also undertakes the functions of scientific and technological services, and also undertakes the functions of intermediary agencies such as inspection and inspection. Therefore, the construction system of urban modern agricultural parks should be established with the park management committee as the core, and the Management Committee of Qionglai City Modern Agricultural Park, the first entity running an agricultural park management institution in Chengdu, should be established. The Management Committee integrates industrial planning, industrial development, production construction, service management and Party building, optimizes the modern agricultural industry system, production system and management system, and promotes the integration of agricultural seed production, circulation and safety monitoring in the park. Moreover, the government should fully grant the administrative authority of the park management committee, which is only responsible for the Standing Committee of the Chengdu Municipal Committee. Local government departments shall not interfere with or obstruct any matters concerning the construction and daily operation of the park as long as the administrative departments of the park perform their functions and powers within the scope of their duties. Local functional departments are also not allowed to interfere in the daily business activities of the park under various names such as inspection and supervision.

C. Innovating agricultural industry development policy

First, we need to optimize the promotion policies of the agricultural seed industry. The Chengdu Municipal Party Committee and Qionglai Municipal Party Committee and Municipal Government should promulgate relevant policies to promote agricultural seed industry, and support and promote the development of agricultural seed industry from the aspects of base construction, brand building, land security and so on. On the one hand, we should recognize the urgency and necessity of seed industry park construction from the strategic point of view of seed industry security; on the other hand, we should implement the safeguard measures to support the long-term development of seed industry from the strategic policy. Second, we should implement the strategy of giving priority to the development of talents. On the one hand, 18 new policies of "Qiongzhou Talents" and related supporting policies have been promulgated to comprehensively improve the supply level of human resources elements from the aspects of talent introduction, training and service. On the other hand, strategic thinking and policy measures should be taken to attract high-

end talents in seed industry, and various preferential policies such as salary treatment and identity recognition should be adopted to attract top agricultural seed industry talents to work and live in Qionglai seed industry park. Thirdly, we should strengthen financial support. Provincial, municipal and local governments should actively introduce social capital to set up an agricultural industry development fund, make good use of relevant loan platforms, and fully support enterprises in the industrial chain to become bigger and stronger.

D. Building a series of new infrastructures

Firstly, according to the standards and requirements of high-end modern agricultural industrial park, the necessary hardware facilities such as road traffic, water, electricity and gas in the production, living and office areas of the park should be built; secondly, according to the standards of industrial ecosystem, the development of grain and oil industry led by high-end seed industry should be highlighted, and high-end seed production should be implemented. Seven major construction projects, including agricultural and sideline products processing logistics, characteristic towns, pastoral complexes, forest pans in Western Sichuan and infrastructure facilities, have a total investment of about 3.348 billion yuan. Efforts have been made to build Qionglai's mountains, waters, towns and villages into "looking at mountains and rivers and recalling nostalgia" high-quality pastoral scenic spots.

V. CONCLUSION

Qionglai city should realize the road of promoting modern agriculture development through the development of modern agricultural seed industry park. Qionglai Modern Agricultural Seed Industry Park has scientific research service function, agricultural machinery service function, warehouses and logistics function, exhibition and sales function and financial information function. And its overall layout should be "high-end seed industry research and development base - high-end seed industry test and demonstration base - seed industry production base - grain and oil production base". In order to ensure the smooth progress of its planning and construction, governments at all levels should start with the innovation of mechanism and system, the promotion of agricultural seed industry, agricultural industry policy and the construction of project facilities.

REFERENCES

- [1] Qian Forrest Zhang and J. A. Donaldson. "The Rise of Agrarian Capitalism with Chinese Characteristics: Agricultural Modernization, Agribusiness and Collective Land Rights." *China Journal* 60.60(2008): 25-47.
- [2] Xiao Ma, et al. "The Income Gap between Urban and Rural Residents in China: Since 1978." *Computational Economics* 5(2017): 1-22.
- [3] Ploeg, Jan Douwe Van Der, et al. "Rural Development: From Practices and Policies towards Theory." *Sociologia Ruralis* 40.4(2010): 391-408.
- [4] Long Hualou, Y. Liu, and J. Zou. "Assessment of Rural Development Types and Their Rurality in Eastern Coastal China." *Acta Geographica Sinica* 64.4(2009): 426-434.